

IN THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the instant application. The present status of each claim is indicated in parentheses following the claim number. An instruction line precedes each claim that is amended, cancelled, or added by the instant paper.

Please **cancel** claims 1-28 without prejudice.

1-28 (Cancelled)

Please **amend** claims 29 as follows:

29. (Currently Amended) ~~A immunoassay~~An immunoassay for screening modulators of threonine or serine kinase activity comprising:

a) providing a threonine or serine kinase substrate protein or peptide comprising the sequence motif

-Z-X-Y or -Y-X-Z-

wherein

Z = threonine or serine

X = a sequence of amino acids, ~~preferably in~~  
the range of between 1 and 1000 amino acids,  
which may be the same or different

Y = phospho-tyrosine, phospho-threonine or  
phospho-serine;

b) adding a test compound;

~~b) incubating~~ c) incubating the protein or peptide  
with a phosphate donor and a threonine or serine  
kinase ~~to form a protein or peptide which is~~  
~~phosphorylated at positions Y and Z~~ under  
conditions and for a sufficient time to permit  
phosphorylation of the Z position of the kinase  
substrate peptide or protein;

~~e) adding~~ d) adding an antibody having a specificity  
to ~~at~~ the kinase substrate peptide or protein which  
is phosphorylated at the Y and Z  
~~position~~ positions;

~~d) adding a test compound;~~

e) detecting the threonine or serine kinase  
activity; and

f) comparing the threonine or serine kinase activity  
in the presence of the test compound with the  
threonine or serine kinase activity in the  
absence of the test compound,

wherein altered threonine or serine kinase activity in  
the presence of the test compound relative to  
threonine or serine kinase activity in the absence of  
the test compound indicates a modulator of threonine  
or serine kinase activity.

30. (Previously Presented) The method of claim 29,  
wherein a threonine or serine kinase inhibitor is  
indicated by lower threonine or serine kinase activity  
in the presence of the test compound relative to the  
threonine or serine kinase activity in the absence of  
the test compound.

Please **cancel** claims 31-35 without prejudice.

31-35 (Cancelled)

Please **add** claim 36 as follows:

36. (New) The immunoassay according to claim 29, wherein the phosphate donor is ATP, GTP, or a synthetic cosubstrate.

Please **add** claim 37 as follows:

37. (New) The immunoassay according to claim 29, wherein the immunoassay is performed as a direct binding immunoassay.

Please **add** claim 38 as follows:

38. (New) The immunoassay according to claim 37, wherein said peptide or protein further comprises a molecular label.

Please **add** claim 39 as follows:

39. (New) The immunoassay according to claim 37, wherein said antibody further comprises a molecular label.

Please **add** claim 40 as follows:

40. (New) The immunoassay according to claim 38, wherein said label is selected from the group consisting of a luminescent tag, a radioactive marker, a reporter enzyme, and an affinity ligand.

Please **add** claim 41 as follows:

41. (New) The immunoassay according to claim 29, wherein the immunoassay is performed as an indirect binding immunoassay.

Please **add** claim 42 as follows:

42. (New) The immunoassay according to claim 41 further comprising:

g) adding a competitor protein or competitor peptide comprising the sequence motif

-Z'-X'-Y' or -Y'-X'-Z'-

wherein

Z' = phospho-threonine or phospho-serine

X' = a sequence of amino acids, preferably  
between 1 and 1000 amino acids, which may be  
the same or different

Y' = phospho-tyrosine, phospho-threonine or  
phospho-serine.

Please **add** claim 43 as follows:

43. (New) The immunoassay according to claim 42, wherein  
the competitor protein or competitor peptide further  
comprises a label selected from the group consisting  
of a luminescent tag, a radioactive marker, a reporter  
enzyme, and an affinity tag.

Please **add** claim 44 as follows:

44. (New) The immunoassay according to claim 43, wherein  
the competitor protein or competitor peptide comprises  
the amino acid sequence of SEQ ID NO:3 such that said  
sequence motif is

-Y'-X'-Z'-

wherein

Y' is phosphorylated Tyr<sup>5</sup> of SEQ ID NO:3,

X' is Pro<sup>6</sup> of SEQ ID NO:3, and

Z' is phosphorylated Thr<sup>7</sup> of SEQ ID NO:3.

Please **add** claim 45 as follows:

45. (New) The immunoassay according to claim 29, wherein said e) detecting threonine or serine kinase activity is achieved by fluorescence detection, fluorescence polarization analysis, fluorescence correlation spectroscopy, fluorescence resonance energy transfer analysis, or fluorescence intensity distribution analysis.

Please **add** claim 46 as follows:

46. (New) The immunoassay according to claim 29, wherein the threonine or serine kinase is a threonine kinase.

Please **add** claim 47 as follows:

47. (New) The immunoassay according to claim 29, wherein the substrate protein or substrate peptide comprises the amino acid sequence of SEQ ID NO:2 such that said sequence motif is

-Y-X-Z-

wherein

Y is phosphorylated Tyr<sup>5</sup> of SEQ ID NO:2,

X is Pro<sup>6</sup> of SEQ ID NO:2, and

Z is Thr<sup>7</sup> of SEQ ID NO:2.

Please **add** claim 48 as follows:

48. (New) An immunoassay for screening modulators of threonine or serine kinase activity comprising:

a) providing a threonine or serine kinase substrate protein or peptide comprising the sequence motif

-Z-X-Y or -Y-X-Z-

wherein

Z = threonine or serine



X = a sequence of amino acids in the range of 1  
and 1000 amino acids, which may be the same  
or different

Y = phospho-tyrosine, phospho-threonine or  
phospho-serine;

- b) adding a test compound;
- c) incubating the protein or peptide with a  
phosphate donor and a threonine or serine kinase  
under conditions and for a sufficient time to  
permit phosphorylation of the Z position of the  
kinase substrate peptide or protein;
- d) adding an antibody having a specificity to the  
kinase substrate peptide or protein which is  
phosphorylated at the Y and Z positions;
- e) detecting the threonine or serine kinase  
activity; and
- f) comparing the threonine or serine kinase activity  
in the presence of the test compound with the  
threonine or serine kinase activity in the  
presence of a known modulator,

wherein threonine or sérine kinase activity in the presence of the test compound that is substantially the same as the threonine or serine kinase activity in the presence of the known modulator indicates a modulator of threonine or serine kinase activity.